Managing and Conserving Living Resources and Their Habitats

Restoring and protecting the overall abundance and diversity of habitats and living marine resources in the Sound ultimately improves both its ecological balance and economic well-being. Years of neglect, mismanagement, and damaging actions have diminished the abundance and diversity of habitats and marine resources, causing water quality problems, adversely affecting land use, and contributing to damaging economic impacts from flooding, erosion and runoff pollution.

Strategy:

The LIS Habitat Restoration Strategy was adopted by the LISS in February 1998. Its goals are to: 1) continue the active partnership among Federal agencies, states, local municipalities, and the public through the New York Sea Grant, the CAC, and environmental groups; 2) restore the ecological functions of degraded and lost habitat; 3) restore at least 2,000 acres and 100 miles of river corridor to anadromous fish within the first ten years of the initiative; and 4) complete a habitat restoration manual by Spring 1998.

There are 26 *Ongoing Programs* and 48 *CCMP Actions* in this priority area. In 1999, the majority of *Ongoing Programs* are reported as *Substantial Progress*; of the 48 *CCMP Actions*, 3are reported as *Complete*; 34 *Substantive Progress/Fully Met/Partial Progress;* 2 *Behind Schedule*; 8 *Not Initiated* ; 1 *Discontinued*.

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Highlights:

- **The single most noteworthy event of 1999 affecting living resources in Long Island Sound was the significant loss of the American lobster, *Homarus americanus*, in the western Sound. At the urging of lobstermen, and at the request of the Governors of New York and Connecticut, the Secretary of Commerce declared a lobster fishery failure in the Sound. This opened the way for further Congressional action to provide Federal disaster relief to lobster fishers from both states, and research funds to assist in the investigation of the cause of the mortalities.**

  As of this writing, the cause of the lobster mortalities has not yet been determined by scientists and researchers engaged in studies and tests on affected western Long Island Sound lobsters. Scientists at the University of Connecticut have identified a parasite, *paramoeba*, in nerve tissues of affected lobsters. The exact species of this parasite, and its relationship to the lobster deaths has not of yet been scientifically established.

- **The LISS issued a Request for Proposals in November 1999 to study, among other topics, the causes of the lobster mortalities in the Sound. In 1999, the Management Committee reserved funds to create a LIS research program to address basic understanding of the Sound as an ecosystem. The Connecticut and New York Sea Grant programs are partners in this effort, committing funds to the research program in 1999.**

- **The states of Connecticut and New York made excellent overall progress toward the goals of the Habitat Restoration Strategy. Connecticut has restored over 68 acres of tidal wetland and 22.5 miles of river corridor has been reopened to anadromous fish. New York has provided over $2.5 million in state Bond Act funds in 1999 to restore 85 acres of aquatic habitat. The Baxter Pond project was completed in 1999.**

- **During 1999, Connecticut acquired 2,910 acres for open space at a cost of nearly $10.6 million, while assisting municipalities, land trusts, and water companies with the purchase of another 4,203 cares with $10 million through the state DEP open space grant program.**

- **The Long Island Sound Watershed Alliance (LISWA) passed a Resolution at its April 1999 meeting supporting the creation of a Long Island Sound Reserve system, as called for in the CCMP.**

- **The CAC sent a letter to the Policy Committee in June 1999 supporting the creation of a LIS reserve that would identify and protect open space and underwater habitats in the Sound. A coalition of interest groups is working to implement this CCMP action.**

SUMMARY OF MANAGEMENT ACTIONS: MANAGEMENT AND CONSERVATION OF LIVING RESOURCES AND THEIR HABITATS

1. RESTORATION AND ENHANCEMENT OF AQUATIC AND TERRESTRIAL HABITATS (CCMP TABLE 40, P.107)

Ongoing Programs	Responsible Parties	Status[2]	Description	Upcoming Action
L1-1. Connecticut, New York, and federal agencies will continue to pursue restoration of degraded habitat.	**NYSDEC NYSDOS CTDEP CTDOT USFWS USACE USEPA**	**Substantive progress**	The LIS Habitat Restoration Plan to restore 2,000 acres of habitat and 100 miles of riverine migratory corridor is being implemented by an interagency team. In Connecticut for 1999, 5 tidal wetland restoration projects were competed for a total of 68 acres and 11 riverine migratory corridor projects were completed for a total of 22.5 miles. Significant progress was made in the development of a scope of work and the design contract language for the Old Field Creek wetland restoration that is funded through ISTEA and EP"s Coves and Embayments Program. DEP and NOAA have selected two riverine migratory projects that will be funded with oil spill recovery funds. The USACE reconnaissance study and associated scope of work was completed and evaluated by CTDEP. Due to funding constraints, only one of the riverine migratory corridor projects will enter the design stage. The Wetland Team and Riverine Migratory Team have each identified work priorities for the year 2000. DEP identified two new populations of the invasive water chestnut on the tidal Connecticut River in the Hartford area. One population was harvested and the second population was located too late to begin control measures.	Third phase of Orient Point County (NY) Park grassland restoration project scheduled to begin Spring 2000.
L1-2. Through Connecticut's coastal permit programs and consistency with the CT Coastal Management Act, applicants may be required to protect, restore or enhance aquatic resources.	**CTDEP**	**Substantive progress**	Through the requirements of the Coastal Zone Management Act and permitting programs, tidal wetlands, intertidal flats, submerged aquatic plants, and beaches and dunes are preserved. During 1999 several permitted activities resulted in a net positive impact of 90 acres of tidal wetlands.	
L1-3. Connecticut preparing a tidal wetland management plan that includes an identification of potential wetland restoration sites.	**CTDEP**	**Complete**	**A wetland restoration plan has been developed that identifies restoration goals, strategies, and includes an inventory of potentially restorable sites. This inventory has been upgraded to include the delineation of the identified sites in GIS as part of the LISS habitat restoration initiative.**	
L1-4. Connecticut will continue the Coves and Embayments Restoration program to restore degraded tidal and coastal embayments and coves.	**CTDEP**	**Fully Met**	CTDEP continued its Coves and Embayments program in 1999. The 5 wetland projects completed in 1999 and reported in L1-1 were funded in part by the Coves and Embayment program. These include 2 sites within Hammonassett State Park in Madison, the East River in Guilford, Mill Meadows in Old Saybrook and Davis Pond marsh in East Lyme. The Mill Meadow project represents the second wetland restoration project in the Nation to be completed with matching funds from DOT's ISTEA.	Coves & Embayments program is beginning to automate project database and considering a web site in the future for sharing information on restoration projects.

KEY: 1) Type: Commitment, Recommendation 2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated
Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

1. RESTORATION AND ENHANCEMENT OF AQUATIC AND TERRESTRIAL HABITATS (CCMP TABLE 40, P.107)

Ongoing Programs	Responsible Parties	Status[2]	Description	Upcoming Action
L1-5. Connecticut, New York, and federal agencies currently administer programs for the restoration of habitats other than tidal wetlands such as dunes, submerged aquatic vegetation, and coastal woodlands.	**CTDEP NYSDEC USFWS**	**Fully Met**	See Ongoing Program L1-1.	
L1-6. New York is phasing out, and Connecticut prohibits, maintenance ditching of mosquito ditches in favor of selective use of open marsh water management techniques to control mosquitos and restore pools and ponds on tidal wetlands.	**CTDEP NYSDEC federal agencies**	**Fully Met**	Grid ditching was discontinued in Connecticut in 1985 and replaced with open marsh management. Ditches are gradually filling and restoring marsh habitat. In some cases, ditches are plugged with soil. On NYS property, remnant mosquito ditches are being used to control mosquito reproduction and minimize Phragmites colonization through salt water retention.	

1. RESTORATION AND ENHANCEMENT OF AQUATIC AND TERRESTRIAL HABITATS (CCMP TABLE 40, P.107)

CCMP Action	Type[1]	Responsible Parties	When	Estimated Cost	Status[2]	Description	Upcoming Action
L1-7. Coastal America, a cooperative effort of several federal agencies, is conducting a study in Connecticut to evaluate the impacts of transportation facilities upon ten tidal wetland sites. This study is sponsored by the CTDEP and undertaken by the USACE. When the study is completed, restoration plans will be developed for those sites where a transportation facility is shown to be the cause of degradation. Restoration is expected to be implemented through a combination of ISTEA, Water Resources Development Act, Long Island Sound Cleanup Account funds, New York's Environmental Protection Fund, and, where appropriate, natural resources damages recovered under CERCLA or OPA90.	**C**	**CTDEP CTDOT Coastal America Partners**	**Study was completed in 1994; restoration projects will proceed as funding is approved.**	**$100,000 for the initial study; restoration costs will vary for each project site.**	Study Complete	The study identified 5 tidal wetlands that were degraded as a result of transportation facilities. CTDEP developed a justification for restoring these sites using ISTEA funds and Coastal America and CTDOT received funding. One of the original restoration projects identified in the Coastal America study has been completed by CTDEP. Mill Meadows in Old Saybrook was completed through a CTDEP, CTDOT and town of Old Saybrook partnership. The CT Coves and Embayment Program and DOT's ISTEA program provided the funding for this project.	Continue to implement the remaining 3 projects and present new ones to Coastal America for consideration.

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Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

1. RESTORATION AND ENHANCEMENT OF AQUATIC AND TERRESTRIAL HABITATS (CCMP TABLE 40, P.107)

CCMP Action	Type[1]	Responsible Parties	When	Estimated Cost	Status[2]	Description	Upcoming Action
L1-8. Connecticut's Coves & Embayments Program will complete nine restoration projects in progress and commitments to begin three new projects.	**C**	**CTDEP in cooperation with the municipal sponsor**	**Varies depending on project**	**$263,625 for projects in progress and $123,475 for projects to commence**	**Complete**	**See Ongoing Program L1-1 and L1-4**	
L1-9. Connecticut and New York should continue to pursue the use of funds from the following programs, and explore additional funding sources, to support restoration and enhancement activities described in the previous recommendation: The Land and Water Conservation Fund, the Intermodal Surface Transportation Efficiency Act (ISTEA) Enhancement Program, the Partners in Wildlife Program,§ 319 of the Clean Water Act, Army Corps of Engineers Section 22 Planning Funds, the Water Resources Development Act, National Coastal Wetlands Conservation Grants, the North American Waterfowl Management Plan, Connecticut's Long Island Sound Cleanup Funds, and the Coastal Zone Management Act.	**R**	**CTDEP CTDOT NYDOT NYSDEC NYSDOS EPA USACE USFWS**	**Ongoing**	**Existing staff will be used; project costs vary from site to site**	Substantive progress	CTDEP has a number of tidal wetland projects in progress using cited funds. With a §319 NPS grant CTDEP completed projects in 1999 at: Hammonasset Beach State Park; Higganum Cove, a tidal wetland in the Connecticut River estuary; and Jordan Cove. CT state Oil Spill funds restored Davis Pond, East Lyme. NYSDEC and USFWS are pursuing grants cooperatively through local governments for various habitat restoration projects to be funded by the USFWS.	CT is continuing to complete projects and is discussing other potential wetland restoration sites. Additional funding is being sought through the EPA Five Star Restoration Challenge Grant Program to conduct restoration of Lord's Cove on the lower CT River in Lyme. The LISS will continue to work to identify and secure funding for habitat restoration and enhancement activities on Long Island Sound.

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Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

1. RESTORATION AND ENHANCEMENT OF AQUATIC AND TERRESTRIAL HABITATS (CCMP TABLE 40, P.107)

CCMP Action	Type[1]	Responsible Parties	When	Estimated Cost	Status[2]	Description	Upcoming Action
L1-10. The rapid displacement of native brackish and fresh tidal plant communities on the Connecticut River has been identified as the single most significant habitat problem in this estuary. A specific restoration program for the control of common reed in these tidal wetlands needs to be implemented to check and reverse the spread of common reed and develop the most efficient means of effecting this restoration. Control techniques need to be evaluated for the full range of wetland habitat types on the river. Baseline surveys will be established and post-control monitoring over multiple years will be conducted.	**R**	**CTDEP USFWS**	**3 years**	**$130,000 for amphibious mulching machine and $100,000 for staff, supplies, and monitoring.**	Substantive Progress	The restoration of degraded brackish marshes is ongoing in the lower Connecticut River. Restoration has begun on Nott Island WMA in Lyme. A $224,000 matching grant through North American Waterfowl and Wetlands, and North American Wetlands Conservation Grant will be used to restore 350 acres of phragmites-dominated habitat on Great Island and Upper Island, Lyme. Research funds from the LIS License Plate Program were awarded to Yale University to study the genetic structuring of common reed on the tidelands of the CT River. A phragmites working group consisting of managers, scientists, and other interested parties has been established to develop a strategy for dealing with phragmites invasion, particularly on the lower CT River. Two populations of the invasive water chestnut (See L1-1) were identified in the tidal Connecticut River. One population was harvested in Glastonbury in 1999 and the other was found too late in the season to harvest.	
L1-11. New York should continue to phase out maintenance ditching for mosquito control. These programs should receive additional support for selective use of open marsh water management techniques to control mosquitos and restore pools and ponds on tidal wetlands.	**R**	**NYSDEC in cooperation with mosquito control agencies**		**$1,000 per acre for open marsh water management**	Partial Progress	This activity is ongoing in Suffolk County with cooperative efforts between Suffolk County Vector Control, NYSDEC, and USFWS.	Program is continuing. (See L1-6)
L1-12. Obtain long-term funding for Connecticut wetland restoration staff.	**R**	**CTDEP**	**Upon approval of funding**	**$250,000 per year for staff**	Not Initiated	The Wetland Restoration staff remains funded by municipal and state funds on a project by project contractual basis.	Continue efforts to secure permanent, continuing funding.

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Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

1. RESTORATION AND ENHANCEMENT OF AQUATIC AND TERRESTRIAL HABITATS (CCMP TABLE 40, P.107)

CCMP Action	Type[1]	Responsible Parties	When	Estimated Cost	Status[2]	Description	Upcoming Action
L1-13. Connecticut and New York should develop a restoration plan for the full range of coastal terrestrial and estuarine aquatic habitats adjacent to and in Long Island Sound. The restoration plan will include a list of potential restoration projects and a priority listing of projects to be implemented. Preliminary sites identified for future restoration in New York include: City Island ($300,000); Pelham Bay Park ($400,000); Wading River ($50,000); Sunken Meadow Creek ($50,000); Crab Meadow ($50,000); and Mattituck Creek ($100,000). Other sites in New York where costs have not been estimated include Pugsley Creek, Udall's Cove, Oak Neck Creek, Frost Creek, and East Creek. Connecticut has estimated that ten priority sites could be restored for $750,000, or approximately $75,000 per site.	**R**	**CTDEP NYSDEC NYSDOS EPA NOAA USACE USFWS**	**3 years - (1996-1998)**	**$50,000 per year for each state for three years; restoration costs will vary depending upon project type.**	**Complete**	**The initiative is being implemented through an interagency team focusing on 12 terrestrial and aquatic habitat types. See Ongoing Program L1-1.**	
L1-14. New York should strengthen their capabilities for implementing programs that restore degraded habitats. This should be undertaken in cooperation with the implementation of the Long Island Sound Regional Coastal Management Plan.	**R**	**NYSDEC NYSDOS**		**$250,000 per year**	Partial Progress	The NY State Clean Water/Clean Air Bond Act will fund some aquatic restoration projects. See L1-1.	The LIS Coastal Advisory Commission action plan is expected to be released in Spring 2000.

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Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

2. HABITAT PROTECTION AND ACQUISITION (CCMP TABLE 41, P.110)

Ongoing Programs	Responsible Parties	Status[2]	Description	Upcoming Action
L2-1. The states of Connecticut and New York and the USACE will continue to implement their permit programs and coastal consistency provisions of states' Coastal Management Programs to regulate use and development of aquatic resources and critical habitats such as tidal and freshwater wetlands, intertidal flats, submerged aquatic vegetation beds, beaches, and dunes. **These programs also regulate dredging and the disposal of dredged sediments at designated sites in Long Island Sound. Open water disposal is only permitted at the designated open water sites and may only occur if the disposal will not cause adverse impacts to estuarine organisms.**	**CTDEP** **NYSDEC** **NYSDOS** **USACE** **EPA**	Substantive Progress	CTDEP continues to implement its coastal permitting and Federal consistency review programs. During 1999, there were 314 permit and 6 Federal consistency actions. In addition, several new enhancements have occurred during this period. NYSDEC regulates dredging activities through its Tidal Wetlands and Protection of Waters Regulations.	SAV maps are being finalized for distribution to towns and Federal agencies.
L2-2. Connecticut will continue to reduce habitat degradation caused by storm water runoff projects (e.g. chronic dilution effects and sedimentation) through the goal of retaining the first one-inch of runoff.	**CTDEP**	Substantive Progress	This issue is addressed by the CTDEP in the review of any municipal project along the coast requiring mandatory coastal site plan review. The coastal permit program addresses this issue only when the discharge is directly into tidal wetlands and coastal waters. This provision has also been incorporated into the storm water general permits for industrial and construction activity.	Coastal municipalities applying for Phase II municipal storm water permits will work with CTDEP storm water permitting.
L2-3. Connecticut and New York have programs to acquire by easement, fee simple acquisition, or other means habitats important for populations of plants and animals. These programs include the development of priority listings for acquisition and protection. **Connecticut and New York have land acquisition and management programs that use state funds and federal fund programs such as the Land and Water Conservation Fund, the National Coastal Wetland Conservation Program, and the North American Waterfowl Management Plan to protect and acquire coastal lands and wetlands.**	**CTDEP**	Partial Progress	Land acquisition of open space in CT continues under the Recreation and Natural Heritage Trust Program (RNHT) using state bond funds. The RNHT plans to provide $166 million in state bond funds for open space acquisitions by the year 2023. During 1999 CTDEP acquired 2,910 acres at a cost of nearly $10.6 million while assisting municipalities, land trusts, and water companies with the purchase of another 4,203 acres with $10 million through DEP's open space grant program CTDEP manages real property interests for over 211,000 acres of forest, park, wildlife, fishery, water access and natural areas. The state's goal is to reserve not less than 10percent of open/preserved space in Connecticut under DEP ownership and 21percent open/preserved space combined (federal, municipal, and nonprofit) ownership by the year 2023. The open space acquisitions made during 1999 bings Connecticut closer to the goal of 673,210 acres. Currently, an estimated 438,900 acres of open space are owned by the state, Federal government, municipalities, water companies and land conservation organizations (65% of goal). Highlights of land acquired include: Trout Brook Valley in Easton and Weston, acquired in partnership with the Aspetuck Land Trust and the Nature Conservancy; which added over 685 acres of open space to Connecticut providing vistas of LIS and the Saugatuck Reservoir; Oppell property, 2.26 acres: parcel fronts on the Connecticut River and within area of international significant wetlands; Hull property, 7.5 acres: donation of inaccessible property adjacent to Plum Bank Marsh Wildlife Area; Jordan Cove Property, 7 acres: property located in Jordan Cove-Pleasure Beach area of Waterford. Critical habitat located on the site, which includes piping plovers.	CTDEP is committing $6 million for the first round of 2000 and will apply for $12 million under RNHT before the State Bond Commission. NY is updating its open space plan in 2000 to include specific recommendations for LIS acquisition sites.

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Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

2. HABITAT PROTECTION AND ACQUISITION (CCMP TABLE 41, P.110)

Ongoing Programs	Responsible Parties	Status[2]	Description	Upcoming Action
L2-4. The USFWS maintains a national system of refuges, which includes the Stewart B, McKinney National Wildlife Refuge in Connecticut (i.e., Salt Meadow, Chimon Island, Sheffield Island, Goose Island, Milford Point and Falkner Island Units) and Long Island National wildlife Refuge Complex in New York (i.e., Oyster Bay and Target Rock units).	**USFWS**	Substantive Progress	USFWS continues to maintain its refuges in CT and NY.	
L2-5. Congress has authorized the creation of the Silvio Conte Connecticut River National Fish and Wildlife Refuge within the Connecticut River Watershed for the purpose of conserving, protecting and enhancing the Connecticut River Valley populations of plants, fish, and wildlife; preserving natural diversity and water quality; fulfilling international treaty obligations relating to fish and wildlife; and providing opportunities for scientific research and education.	**USFWS**	Substantive Progress	The USFWS has identified 48 focus areas within the 7.2 million acre, 4 state Connecticut River watershed, that support natural diversity in the watershed. The 180,000 acres in the focus areas are targeted for additional protection and management. The Refuge emphasizes partnerships and challenge grants to achieve its goals. In February 2000, the Refuge announced the award of $88,922 to fund 22 projects in the Connecticut River watershed. (www.fws.gov/r5soc/)	
L2-6. Connecticut has established a Migratory Bird Conservation Stamp Program, the proceeds of which can be used for acquisition and management. The newly created state income tax form check off for endangered species, natural areas preserves, and watchable wildlife creates a fund that can be used for the identification, protection, conservation, management, and education activities related to the above listed wildlife and habitats.	**CTDEP**	Substantive Progress	Conservation Stamp program funds were used, in addition to other state and Federal program funds for the following tidal wetland restoration activities in 1999: Cromwell Meadows Wildlife Management Area (WMA) in Cromwell; Nott Island WMA Habitat Restoration (Phase I - Phragmites control) in Lyme, and the East River (WMA) Marsh Restoration Project in Guilford, and the Quinnipiac River and South Cove in Old Saybrook.	Projects expected to be completed in 2000: Great Meadow Marsh; the Housatonic River Marshes in Stratford, and the Great Island Complex WMA March restoration project in Old Lyme.

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Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

2. HABITAT PROTECTION AND ACQUISITION (CCMP TABLE 41, P.110)

CCMP Action	Type[1]	Responsible Parties	When	Estimated Cost	Status[2]	Description	Upcoming Action
L2-7. Create a Long Island Sound Reserve System consisting of areas of land and water of outstanding or exemplary scientific, educational, or biological value to reflect regional differentiation and variety of ecosystems and to include representatives of all of the significant natural habitats found in the Sound. Where appropriate, sites will be selected from existing lands and wetlands held for conservation purposes so that acquisition funds will be directed towards those lands in private ownership that are needed to complete the reserve system. **The primary activities in the recommendation include site identification (2 years) and site protection through the development of management plans, acquisition where necessary, and site management.**	**R**	**CTDEP NYSDEC NYSOPRHP USFWS Long Island Sound Bi-state Committee**		**$50,000 per year for each state for staff to identify sites, develop acquisition strategies and manage the reserve complex. Acquisition costs will depend upon areas identified for protection through purchase.**	Partial Progress	The Long Island Sound Watershed Alliance (LISWA) prepared a resolution at its April 1999 meeting to support the creation of a LIS reserve. In June 1999 the LISS Citizens Advisory Committee (CAC) sent a letter to the LISS Policy Committee highlighting the creation of a LIS reserve as a priority action. A work group began meeting in July 1999 to work out the details of identifying a LIS reserve, criteria for habitat acquisition, funding options, and which agencies will have oversight responsibilities.	A coalition of groups is planning further action in 2000 to assess citizen involvement and participation in the LIS reserve process.
L2-8. Connecticut and New York should continue to acquire or protect through less than fee simple means, significant coastal habitats through funding sources such as the Land and Water Conservation Fund, the National Coastal Wetland Conservation Program, the North American Waterfowl Management Plan, Connecticut's Recreation and Natural Heritage Trust Program, Connecticut's Migratory Bird Conservation Stamp Program, New York's Environmental Protection Fund, and, where appropriate, natural resource damages recovered under CERCLA or OPA90.	**R**	**CTDEP NYSDEC Assistance of local governments, environmental groups and federal granting agencies.**		**$50,000 per year for each state for staff.**	Partial Progress	As an example of habitat protection through less than fee-simple, more than 70 acres of high quality tidal marsh on the CT River in the Cromwell Meadows was donated to the CT Audubon as part of an supplemental environmental penalty. See L2-3.	CTDEP will continue to use RNHT to fund habitat land acquisition in Connecticut.

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Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

2. HABITAT PROTECTION AND ACQUISITION (CCMP TABLE 41, P.110)

CCMP Action	Type[1]	Responsible Parties	When	Estimated Cost	Status[2]	Description	Upcoming Action
L2-9. Acquire and protect those sites that are considered for acquisition in the New York State Open Space Conservation Plan. Sites include Oyster Bay Harbor ($5 million); Porpoise Channel ($2 million); Plum Point ($1 million); Udall's Cove ($8 million). Other sites on Long Island Sound that are among the state's highest priority acquisition sites include: Bronx River Trailway, Udall's Ravine, Alley Creek ($750,000); Long Creek and Mattituck Creek ($340,000); Premium River ($750,000); and Cedar Beach Creek ($186,000).	**R**	**NYSDEC NYSOPRHP**		**Priority sites for acquisition total $16 million**	Partial Progress	New York has made allocations for land acquisitions through the Clean Air/Clean Water Bond Act.	New York State is updating its open space plan in 2000 with a focus on LIS areas.
L2-10. Acquire and protect those sites that are considered priorities for acquisition in Connecticut. The Great Meadows site is the highest priority. (See also Ongoing Programs portion of this table in the CCMP.)	**R**	**CTDEP USFWS**		**$14 million**	Partial progress	The lower CT River, designated as a Wetland of International Importance, is a priority. See action L2-8.	
L2-11. Encourage activities of existing Long Island Sound-specific land trusts and encourage formation of new trusts, to seek donations and easements of localized habitat areas for the plants and animals of Long Island Sound.	**R**	**NYSDEC EPA-LIS Office**		**Redirect base program**	Not Initiated		

KEY: 1) Type: Commitment, Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated
Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

3. INVENTORIES AND MANAGEMENT STRATEGIES FOR AQUATIC AND TERRESTRIAL HABITATS (CCMP TABLE 42, P.112)

Ongoing Programs	Responsible Parties	Status[2]	Description	Upcoming Action
L3-1. Connecticut, New York and The Nature Conservancy will continue the Natural Diversity Database in Connecticut and the Natural Heritage Program in New York. These programs collect, maintain, and update information pertaining to significant terrestrial and aquatic habitats.	**CTDEP NYSDEC NYSOPRHP**	Fully Met	CTDEP's natural diversity database maintains information about locations of state listed species (plants, vertebrates, invertebrates), populations and status, including population size, threats, and dates observed. NYSDEC maintain a database concerning significant fish, wildlife, and plant resources and significant ecological areas. The NY State Office of Parks, Recreation and Historic Preservation (NYSOPRHP) established its own natural resources inventory unit which will be closely coordinated with the National Heritage Database.	
L3-2. The USFWS will continue the Southern New England-New York Bight Coastal and Estuary Project. The project focuses on assessing and monitoring the regional geographic distribution and population status of a large number of key species called *Species of Special Emphasis* and their habitats including evaluating the threats to physical integrity of these habitats and the viability of species populations. Primary objectives are to determine and delineate those regionally important habitats and species populations requiring both immediate and long term protection, conservation, enhancement, and restoration.	**USFWS**	Substantive Progress	The Project, located in Charlestown, Rhode Island, coordinates FWS coastal activities. Its 5 tasks are: 1) inventorying and assessing the status of living coastal resources and habitats in the coastal region; 2) identifying and assessing threats to these resources; 3) developing regional or estuary-wide strategies to protect, restore and enhance living resources and their habitats; 4) coordinating and facilitating the implementation of resource protection enhancement, and restoration strategies; and 5) promoting environmental education and public awareness of coastal living resources, the threats they face, and the opportunities for the public to become involved in the solutions. In 1999, Project staff have actively participated in the LISS Habitat Restoration initiative and in discussions on a LIS reserve system. In 1999, Project staff participated on the LISS public information and education program Small Grants Review Team.	

3. INVENTORIES AND MANAGEMENT STRATEGIES FOR AQUATIC AND TERRESTRIAL HABITATS (CCMP TABLE 42, P.112)

CCMP Action	Type[1]	Responsible Parties	When	Estimated Cost	Status[2]	Description	Upcoming Action
L3-3. The NYSDEC will, on a pilot basis, develop a site-specific habitat management strategy for the Oyster Bay/Cold Spring Harbor complex. Phase II will entail implementation of the identified strategy.	**C**	**LISS NYSDEC**	**Initiated in fall 1992, strategy to be completed in winter 1994**	**$50,000 of LISS funds for the development of the strategy. Implementation costs to be determined**	Behind Schedule	A final draft has been submitted to EPA-LISO for final review. Work continues on development of a habitat management strategy for Milton Harbor in Rye, NY. Work has been completed on a habitat management strategy for Mt. Sinai Harbor, NY.	A draft habitat management strategy for Milton Harbor is expected in Summer 2000.
L3-4. Connecticut is identifying wetland complexes of statewide significance and general wetland protection strategies for areas located in Long Island Sound and the Connecticut River. This project has been funded by the EPA under §104(b) of the Clean Water Act.	**C**	**CTDEP**	**Fall 1994**	**$62,500.**	Behind Schedule	CTDEP has completed the identification of wetland complexes of statewide significance and general wetland protection strategies. Staff are in the process of completing a draft report.	Continue efforts to complete report
L3-5. Develop a nomination document to recommend the designation of the Connecticut River estuary as a *Wetland of International Importance* for the purpose of establishing a formal designation of this area to recognize the ecological significance of this ecosystem and to foster increased protection of its significant habitat complex and living resources.	**C**	**CTDEP**	**Fall 1994**	**$25,000**	**Complete**	**The nomination document was completed in summer 1994 and submitted to the Ramsar Convention Bureau in Switzerland. The nomination was approved and the portions of the tidal wetlands and all of the tidal waters on the lower river were designated as a Wetland of International Importance in October 1994. Subsequently, several new parcels owned by three new partners were added to the designation. To celebrate the 25th anniversary of the Ramsar Convention, a series of public outreach efforts were sponsored in 1996 by CTDEP and USFWS.**	
L3-6. Develop a strategic plan for the estuarine portion of the Connecticut River that will identify habitat and species issues/problems, monitoring, and research needs and recommendations to foster increased protection of this nationally significant ecosystem.	**C**	**CTDEP**	**2 years**	**$50,000 per year for two years**	Substantive Progress	CTDEP continues to make progress in the development of a Special Area Management Plan for the lower Connecticut River. The emphasis of this effort is to develop a management plan that promotes the conservation and restoration of living resources and their habitats. A task force has been assembled to provide advice and recommendations to CTDEP. Meetings were held to solicit ideas.	

KEY: 1) Type: Commitment, Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated
Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

3. INVENTORIES AND MANAGEMENT STRATEGIES FOR AQUATIC AND TERRESTRIAL HABITATS (CCMP TABLE 42, P.112)

CCMP Action	Type[1]	Responsible Parties	When	Estimated Cost	Status[2]	Description	Upcoming Action
L3-7. Develop and periodically update a list of significant habitats, habitat complexes, and sensitive areas for protection and management. When completed, habitat management plans will be developed for these areas. In New York this should be undertaken in cooperation with the implementation of the NYSDOS Long Island Sound Regional Coastal Management Plan.	**R**	**CTDEP NYSDEC NYSDOS**	**Started in 1995.**	**$50,000 per year for each state**	Substantive Progress	See Action L1-13. NYSDOS is updating its Significant Fish and Wildlife Habitat descriptions. A draft narrative document is currently under agency review with NYSDOS.	NYSDOS will circulate the narrative document to outside local, state, and federal agencies in Fall 2000.
L3-8. Expand the Southern New England-New York Bight Coastal and Estuary Project to: 1) include the watersheds of Long Island Sound; and 2) reexamine the habitat complexes previously identified in Long Island Sound based upon the most current listing of Species of Special Emphasis. Examine the complexes more carefully to fine tune the management recommendations and implement these recommendations through state, county and municipal agencies.	**R**	**USFWS**	**Ongoing**		Partial Progress	USFWS continued as an active participant in the LISS Habitat Restoration Initiative providing data on some key habitats in 1999.	
L3-9. Federal habitat programs should develop a watershed approach to protection of living resources of Long Island Sound and their habitats, such as development of a Connecticut River/Long Island Sound Management Unit by the USFWS.	**R**	**USFWS**	**Ongoing**		Partial Progress	USFWS has formed a CT River team, bringing different service units together with a watershed focus.	

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Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

3. INVENTORIES AND MANAGEMENT STRATEGIES FOR AQUATIC AND TERRESTRIAL HABITATS (CCMP TABLE 42, P.112)

CCMP Action	Type[1]	Responsible Parties	When	Estimated Cost	Status[2]	Description	Upcoming Action
L3-10. Designate portions of the Connecticut River estuary as a National Estuarine Research Reserve. A reserve designation will result in promoting research that is directed towards resource management issues and provide facilities and programs for public education and interpretation.	**R**	**CTDEP NOAA**	**3 years for selection of sites and the development and approval of the management plan**	**$150,000**	Partial Progress	The Connecticut River was declared a river of significance under the American Heritage Rivers (AHR) Initiative in July1998. AHR status includes an Action Plan and 29 specific projects focused on conserving and enhancing the economic, cultural heritage and environmental resources of the River and its watershed. The plan involves communities and groups up and down the length of the River supported by federal agencies, from EPA to HUD. There are several first steps. A formal partnership agreement between the local AHR project sponsors and their federal agency partners has to be drafted. A lead federal agency needs to be selected, and a River Navigator chosen. All of these steps involve the local sponsors and representatives from the Council on Environmental Quality and the principal federal agencies already actively working in the Watershed.	The expectation is to have the partnership agreement signed and the lead agency and River Navigator selected by the end of 2000.

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Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

4. MANAGING ENDANGERED AND THREATENED SPECIES (CCMP TABLE 43, P.116)

Ongoing Programs	Responsible Parties	Status[2]	Description	Upcoming Action
L4-1. Connecticut, New York, and federal agencies will continue to implement their Endangered Species Programs in order to protect endangered and threatened species that live in and adjacent to Long Island Sound.	**CTDEP NYSDEC**	Substantive Progress	CTDEP's National Diversity Database (NDD) reviews all coastal permits for impacts to state and federal listed endangered, threatened and special concern species. A LIS License Plate Fund project provided the NDD with funding to prepare 25 endangered, threatened, and special concern plant fact sheets for coastal areas. The NDD has provided all coastal towns with generalized maps of locations of state listed species to be used for municipal plans of conservation and development, land protection activities and environmental planning, including local inland wetland permits. In New York, impacts to state and federal endangered, threatened, and special concern species are considered during the permitting process. As described in L3-1, NYSDEC maintains a database containing information about significant fish, wildlife, and plant resources and significant ecological areas.	

4. MANAGING ENDANGERED AND THREATENED SPECIES (CCMP TABLE 43, P.116)

CCMP Action	Type[1]	Responsible Parties	When	Estimated Cost	Status[2]	Description	Upcoming Action
L4-2. Develop a list of endangered and threatened invertebrates. Maintain and update the diversity database. Periodically revise the list of threatened and endangered species. Expand the monitoring program, identify essential habitats, and develop recovery plans.	**R**	**CTDEP**		**$150,000 per year for staff; $200,000 per year for least tern and piping plover nest site restoration**	Fully Met	CTDEP's Natural Resources Center maintains a natural diversity database that provides up to date information and data on the State's threatened and endangered species..	CTDEP will continue to keep the database current.
L4-3. Develop legislation or regulations in New York state that will minimize disturbance to the essential habitats of rare plants and animals.	**R**	**NYSDEC**		**Redirect Base Program**	Not Initiated		
L4-4. Revise and publish a list of rare and sensitive species associated with the coastal lands and waters of Long Island Sound.	**R**	**NYSDEC**	**Every 5 years**	**$50,000**	Partial Progress	NYSDEC staff are compiling a list of rare plants associated with wetlands in Long Island Sound as part of the LISS Habitat Restoration Initiative.	This list is intended to be included in an appendix to the freshwater wetlands technical document to be produced by the LISS Habitat Restoration Initiative.

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Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

5. MANAGING HARVESTED SPECIES (CCMP TABLE 44, P.117)

Ongoing Programs	Responsible Parties	Status[2]	Description	Upcoming Action
L5-1. Development and implementation of fishery management plans, including research, monitoring, and conservation law enforcement activities.	**NYSDEC**	Fully Met	NYSDEC, as mandated by the Atlantic States Marine Fisheries Commission, has amended marine fishing regulations affecting recreational and commercial harvest of summer flounder (fluke), tautog (blackfish), and black se NYSDEC accepted written comments on changes to the regulations for summer flounder, tautog, and black sea bass until June19, 1998. This was done in order to restore healthy populations of these species. There are ongoing monitoring programs for striped bass, weakfish, winter flounder, fluke and scup. Statistics on other species taken in these surveys are crabs and bait fish. Party boat sampling for blackfish is also conducted.	NYSDEC is initiating an American eel management program focused on young-of-the-year recruitment
L5-2. Management of shellfish aquiculture activities including resource monitoring.	**CTDOA, Bureau of Aquiculture.**	Fully Met	CT DA/BA regularly monitors, manages and enhances shell fisheries in the state.	
L5-3. Improvement of anadromous fish passage opportunities including associated research and monitoring activities.	**CTDEP**	Substantive Progress	The Habitat Restoration Initiative targets river migratory corridors for anadromous fish passage as one of the targeted habitat types. CTDEP used §319 funds to restore fish passage in Connecticut streams. Approximately $170,000 has been spent or committed in the past year to build a fishway on a tributary to the CT River in Old Lyme; plan a fish ladder on the Quinnipiac River; breach a dam on the Naugatuck River; and restore fish passage on a tributary to the Farmington River. The Mianus fish passage project was completed with funding from CTDEP's Coves and Embayments program.	As part of a NY Clean Air/Clean Water Bond Act award, the Town of Huntington, in cooperation with USFWS will be installing a fish ladder at Betty Allen Nature Preserve.
L5-4. Wildlife management, including research and monitoring activities in support of management programs.	**USFWS CTDEP NYSDEC**	Fully Met	Agencies continue their wildlife management, research and monitoring programs.	
L5-5. Activities that minimize mortality due to entrainment and impingement of eggs, larvae, and juvenile and adult aquatic organisms at industrial facilities.	**CTDEP**	Fully Met	CTDEP works through the permit process to see that location/operation of intakes minimize entrainment and impingement where practicable. In 1999 staff from CTDEP began to work on permit modifications to better enforce entrainment and impingement provisions in permits.	

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Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

5. MANAGING HARVESTED SPECIES (CCMP TABLE 44, P.117)

CCMP Action	Type[1]	Responsible Parties	When	Estimated Cost	Status[2]	Description	Upcoming Action
L5-6. Define, revise, and coordinate the establishment of seasonal restrictions for dredging that minimize adverse effects on aquatic organisms, especially finfish and shellfish and their habitats.	**C**	**LISS CTDEP NYSDEC NYSDOS EPA NOAA USACE USFWS MSRC/SUNY**	**1994**	**Redirection of base program**	Fully Met	CTDEP incorporates seasonal restrictions on dredging and disposal activities into permit authorizations for a number of sensitive living resources including anadromous finfish, winter flounder, and shellfish. CTDEP's Long Island Sound Research Fund supported research on the effects of suspended sediments on survival of winter flounder eggs and larvae. The Fisheries Division has surveyed five rivers and harbors for occurrence of winter flounder larvae and the Department of Transportation has funded studies of noise associated with bridge work. These activities improve our ability to assess the need for and timing of seasonal restrictions on dredging and other construction activities to protect living resources. The LISS co-sponsored a LIS Dredged Material Management workshop in March 1999. NYSDEC incorporates seasonal restrictions on dredging and disposal activities into permit conditions to protect a number of sensitive living resources, including finfish and shellfish, and for restrictions on shore disposal activities to protect sensitive species of shorebirds.	
L5-7. Enhance implementation of interstate fishery management plans for Long Island Sound fishery resources.	**R**	**CTDEP NYSDEC NMFS USFWS**	**To be initiated upon approval of funding**	**$250,000 per year per state will be used to fund fishery management staff and, in Connecticut, law enforcement officers.**	Partial Progress	New York passed legislation in 1998 to further restrict commercial purse seine vessel activity in NY waters of LIS.	The LIS menhaden moratorium was extended to July 2001.

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Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

5. MANAGING HARVESTED SPECIES (CCMP TABLE 44, P.117)

CCMP Action	Type[1]	Responsible Parties	When	Estimated Cost	Status[2]	Description	Upcoming Action
L5-8. Expand efforts to bypass obstructions to anadromous finfish migrations on Connecticut tributaries to Long Island Sound and the Connecticut River by constructing or installing fishways or fishlifts.	**R**	**CTDEP Municipal governments and environmental organizations USFWS NMFS**	**To be initiated with enhanced funding**	**$100,000 per year for CTDEP staff to administer activities and construct small tributary fishways. Costs to be determined as project opportunities arise.**	Substantive Progress	Anadromous fish passage is being enhanced through cooperative efforts of CTDEP, municipalities and dam owners. Also see LR&H5-3. Eleven riverine migratory corridor projects (see LR&H1-1) were completed or placed into service in 1999. Four dam removal projects opened up over 15 miles to fish migration. Three dams, Anaconda, Union City, and Freight Street, were completely removed and the breached opening of the Platts Mill Dam was widened to expedite fish passage during 1999 (all on the Naugatuck River). Seven fish passage projects were completed or placed in operation in 1999: 1) modification of the existing pool and weir fishway by adding a steep pass extension at the Lower Pond Dam fishway in Lyme; 2) installation of a pool and weir fishway at Lower McCulloch Dam in Old Lyme; 3) construction of a pool and weir fishway at Chalker Millpond Dam in Old Saybrook; 4) construction of a Denil Fishway and downstream bypass at the Kinneytown Dam in Seymour; 5) installation of a steeppass fishway at Trading Cove Dam in Montville; and 7) construction of a Denil Fishway around Versailles Pond Dam in Sprague. A total of 22.5 miles of riverine migratory corridors were opened up as a result of these completed projects.	
L5-9. Enhance municipal shellfish restoration programs.	**R**	**Municipal governments**	**Upon funding**	**$100,000 per state per year for a number of small grants to municipalities to enhance oyster, clam and bay scallop restoration efforts.**	Partially Addressed	Several municipal governments in Connecticut are carrying out small programs using existing resources at the local level.	

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Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

5. MANAGING HARVESTED SPECIES (CCMP TABLE 44, P.117)

CCMP Action	Type[1]	Responsible Parties	When	Estimated Cost	Status[2]	Description	Upcoming Action
L5-10. Enhance the Connecticut Oyster Restoration Program on public beds in state waters by stocking settling habitat (cultch) and conducting related activities (e.g., resource sampling).	**R**	**CTDOA, Bureau of Aquiculture**	**To be initiated with enhanced funding. On-going.**	**$100,000 per year for staff and $400,000 per year for purchase of cultch for maintenance of restored beds.**	Partially Addressed	CT DOA, the shellfish industry, and the former United Illuminating Company joint venture was established to manage cultures on public beds, with a budget of $100,000 in 1999.	
L5-11. Develop a marine biotoxin assessment program for shellfish.	**R**	**CTDOA, Bureau of Aquiculture NYSDEC**	**To be initiated upon approval of funding. On-going.**	**$300,000 per year in Connecticut and $150,000 per year in New York for staff and laboratory costs.**	Partially Addressed	CT DOA initiated monitoring using existing agency resources. Fixed stations are monitored in susceptible areas and laboratory analyses are conducted.	CT Department of Agriculture training volunteers to monitor phytoplankton in LIS.
L5-12. Develop artificial reefs in appropriate areas of New York waters to increase fishing opportunities, consistent with the New York State Artificial Reef Development Plan. Plans have been developed to construct reefs in New York waters of Long Island Sound off Matinecock Point, Eatons Neck, Miller Place/ Mt. Sinai, and Mattituck Inlet.	**R**	**NYSDEC and Cooperators**	**To be initiated upon approval of funding**	**Approximately $100,000 for each of four reefs planned for Long Island Sound.**	Not Initiated	In the absence of funding and staff necessary to develop additional artificial reefs, NYSDEC's Artificial Reef Program has been focused on existing artificial reefs.	The feasibility of building an oyster reef in Port Jefferson Harbor will be explored.

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5. MANAGING HARVESTED SPECIES (CCMP TABLE 44, P.117)

CCMP Action	Type[1]	Responsible Parties	When	Estimated Cost	Status[2]	Description	Upcoming Action
L5-13. Develop methods to reduce the incidental take of nontarget species and undersized individuals in fishing activities.	**R**	**CTDEP NYSDEC NMFS USFWS Atlantic States Marine Fisheries Council New England and Mid-Atlantic Fishery Management Councils Commercial and recreational fishing organizations.**	**To be initiated upon approval of funding**	**$50,000 per year per state for staff and $10,000 - $20,000 per year for test materials and equipment.**	Partially addressed	State agencies, the Atlantic States Marine Fisheries Commission, and fishery management councils have reduced the incidental take of juveniles and some non-target species through increased cod end mesh size restrictions in otter trawls and escape vents in certain pot and trap fisheries for lobsters and finfish.	

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Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

6. MANAGING EXOTIC AND NUISANCE SPECIES (CCMP TABLE 45, P.120)

CCMP Action	Type[1]	Responsible Parties	When	Estimated Cost	Status[2]	Description	Upcoming Action
L6-1. Develop measures to prohibit or prevent the induction or release to Long Island Sound and its watershed of known or potentially undesirable species.	**R**	**CTDEP NYSDEC USFWS U.S. Coast Guard Shipping Companies**	**To be initiated as soon as possible**	**$50,000 per year per state for staff to develop and manage program**	Partial Progress	Through its coastal permit programs, CTDEP prohibits the introduction of non-indigenous plant stock for aquatic restoration projects such as tidal wetlands and eelgrass. Only plant stock collected in LIS is allowed. DEP discourages the use of beach grass in dunegrass restoration that is not derived from the shores of the Sound. PA 97-32 established the authority for the CTDOA to control the importation, cultivation, or raising of aquatic plants or animals that are not native to the state that might have adverse impacts upon living resources or aquatic habitats. CTDEP is working with USFWS and other organization in Massachusetts to remove an infestation in the Connecticut River in Holyoke, MA. NYSDEC, in its Tidal Wetlands Permitting Program, expressly discourages introduction of exotic species to the coastal environment.	CTDEP and East Hartford officials are working towards an eradication plan for the Hockanum River infestation site for the summer of 2000.
L6-2. Implement a management program to reduce abundance of mute swans that are causing losses of certain aquatic habitat types such as submerged aquatic vegetation and certain types of emergent tidal wetland vegetation.	**R**	**CTDEP**	**To be initiated as soon as possible**	**To be included within costs of above item.**	Not Initiated		

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Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

7. EDUCATING THE PUBLIC ABOUT THE PLANTS AND ANIMALS OF LONG ISLAND SOUND (CCMP TABLE 46, P.120)

CCMP Action	Type[1]	Responsible Parties	When	Estimated Cost	Status[2]	Description	Upcoming Action
L7-1. Develop an outreach program to inform and educate the public about the plants and animals in Long Island Sound.	**R**	**Federal, state, and local governments, educational systems, organizations, and environmental organizations**		**See Public Involvement and Education Section**	Substantive Progress	CTDEP continues to promote public involvement and education through many of its programs, especially use of LIS License Plate Funds. Examples include: Tidal Marshes of LIS; A Guide to the Housatonic River; Tidelands of the Connecticut River; the placement of interpretive signs or observation platforms at 12 coastal locations; displays and equipment at the Meigs Pont Nature Center; LIS Video for elementary through high school students; A Living Harvest: Oystering in LIS; Celebrating the Sea classroom programs; a mobile environmental library for the Old Saybrook schools; Birds of the CT Coast on display at the CT Museum of Natural History; Marine Animals of Southern New England and New York: an identification key; Long Island Sound Alive: a laser disc production showing the resources of LIS; the salt marsh laboratory at CT Audubon Coastal Center; fact sheets about endangered species; and development of an interpretive trail at Cove Island State park. NY Sea Grant/CT Sea Grant produced a slide show, script, and booklet on the plants and animals of LIS that are available to groups.	CTDEP will produce three brochures on CT's Coastal Management Program to be issued by May 2001.
L7-2. Develop a citizens monitoring program specific to the plants and animals of Long Island Sound sufficient to aid managers in identifying problems and assessing the effects of management efforts.	**R**	**Federal, state and local governments, educational and environmental organizations and private citizens.**		**See Public Involvement and Education Section**	Partially Addressed	CTDEP works with citizens monitoring groups to promote reliable and accurate field and laboratory efforts, including a volunteer Secchi disk monitoring program to determine long term changes in water clarity resulting from nitrogen enrichment and management and benefits for eelgrass beds. CTDEP is reviewing Secchi disk data from 1998/1999. Only one volunteer monitoring group submitted data from one site in 1999. The program has experienced turnover and decline in volunteer monitors and CTDEP is currently soliciting citizens to join as new volunteer monitors.	The Secchi disk program is ongoing and seeks to add more volunteer monitors in 2000

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Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

8. DEVELOPING AN INFORMATIONAL DATABASE ABOUT LIVING RESOURCES AND THEIR HABITATS (CCMP TABLE 47, P.122)

Ongoing Programs	Responsible Parties	Status[2]	Description	Upcoming Action
L8-1. Connecticut will continue its statewide Geographic Information System (GIS) Program to digitize spatial information and data for resource management purposes.	**CTDEP**	Fully Met	CTDEP's Natural Resources Center continues its efforts to develop data layers on the State's GIS, useful for resource management purposes.	
L8-2. Connecticut has created a Long Island Sound Resources Center for the purpose of : 1) developing the full potential of estuarine related GIS applications; 2) computerizing pertinent literature and data for rapid access through standard word search and spatial basis; and 3) completion of the estuarine geology of Long Island Sound. Additionally, this Center is taking a leadership role in the development of side scan sonar mapping of Long Island Sound that is now being overlaid with benthic community information. This will become the foundation of future living species and habitat management programs.	**CTDEP**	Fully Met	The collection is now on-line and searchable via the world-wide-web. A new survey of LIS sedimentary habitats is nearing publication. The Center is working on a public access database. A compact disc (CD) of LIS environmental studies -- sidescan sonar, seismic reflection, bathymetric, sediment and bibliographic data and interpretations is available from Woods Hole Institute. (Open file Report 98-502)	

8. DEVELOPING AN INFORMATIONAL DATABASE ABOUT LIVING RESOURCES AND THEIR HABITATS (CCMP TABLE 47, P.122)

CCMP Action	Type[1]	Responsible Parties	When	Estimated Cost	Status[2]	Description	Upcoming Action
L8-3. Identify spatial data for living resources and habitat on a Sound wide basis and digitize priority data sets for incorporating into a Sound wide Geographical Information System.	**C**	**LISS**	**Initiated in winter of 1993-1994; completion date is winter 1994-1995**	**$97,000 LISS Funds**	Substantive Progress	Through funding provided by the LISS, an electronic base map for all of LIS that incorporates the most current bathymetry has been created. CTDEP is developing GIS projects and resource coverages. CTDEP encouraged NOAA to update the 1984 Environmental Sensitivity Index mapping project that is used to support oil spill planning and response. NOAA secured funding for that project, scheduled to begin January 2000. CTDEP continues to expand the Oil Spill GIS project. The waterfowl coverage was radically revised and enhanced. The waterfowl boundary areas have been revised and data about waterfowl use has been added to the data tables. Staff updated all of the existing projects to be compatible with the new GIS server and convert data to the new system.	

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8. DEVELOPING AN INFORMATIONAL DATABASE ABOUT LIVING RESOURCES AND THEIR HABITATS (CCMP TABLE 47, P.122)

CCMP Action	Type[1]	Responsible Parties	When	Estimated Cost	Status[2]	Description	Upcoming Action
L8-4. Expand the data layers for living resources and their habitats on a Sound wide basis.	**R**	**EPA-LIS Office**	**5 years**	**$75,000 per year**	Not Initiated		
L8-5. Develop and maintain state databases and an integrated Long Island Sound database describing the living resources of Long Island Sound and their habitats.	**R**	**CTDEP NYSDEC**		**$50,000 per year for each state for staff and $100,000 one-time only for data processing hardware/ software**	Partially Addressed	CTDEP maintains statistical databases on Long Island Sound marine resource surveys, inshore seine surveys, and lobster studies. NYSDEC maintains statistical databases on lobster, seine surveys, anadromous fish, and party/charter boat surveys in Long Island Sound.	
L8-6. Expand the side scan sonar/benthic habitat mapping program in order to create baseline information for management and conservation purposes.	**R**	**CTDEP USGS**		**$100,000 per year for 5 years**	Partially Addressed	The USGS and Coastal and Marine Geology Program, in cooperation with CTDEP initiated a multidisciplinary project designed to understand the distribution of bottom contaminants and benthic habitats in LIS. Benthic mapping was an integral part of the program. This project prompted a number of studies that were focused on regional processes, conditions and characteristics of the LIS floor. For 1999-2000, ten research papers have been completed and are under review by the CTDEP. The side scan sonar mapping for this project has been completed.	The CTDEP, in cooperation with USGS expects to publish a series of ten LIS research papers in the Journal of Coastal Research for the winter of 2000-2001. A new CD will be produced by 2001 containing new maps and data
L8-7. Maintain and enhance the Long Island Sound literature, indexing and GIS capabilities of the Marine Sciences Research Center at SUNY, Stony Brook.	**R**	**MSRC/SUNY**		**$75,000 per year**	Not Initiated		

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9. SOUND WIDE AND SITE-SPECIFIC RESEARCH AND MONITORING (CCMP TABLE 48, P.123)

Ongoing Programs	Responsible Parties	Status[2]	Description	Upcoming Action
L9-1. Connecticut conducts a Sound wide open water fishery survey that has become an integral component of the LISS monitoring and Management programs. In addition, Connecticut conducts a nearshore finfish survey, and surveys of lobster, shad, anadromous herrings, Atlantic sturgeon, and shortnose sturgeon (the latter is listed by the federal government as an endangered species). Other marine surveys include a survey of oyster recruitment (Connecticut Department of Agriculture, Aquiculture Division) and recreational and commercial fishery statistics activities.	**CTDEP**	Substantive Progress	Enhancements to recreational and commercial fishing statistics are being developed through Atlantic States Marine Fisheries Commission (ASMFC), Atlantic Coast Cooperative Statistics Program (ACCSP), NMFS and coastal states taking part. CTDEP applies for Federal funds under the Federal Aid in Sport Fish Restoration Act for five-year projects. Each year CTDEP produces an annual report on the LIS Soundwide surveys; at the end of the project period, it produces a final report. In 1999 CTDEP completed a five year project and reported its Soundwide survey data in *A Study of Marine Recreational Fisheries in Connecticut.* The report for March 1994-February 1999 is available upon request. The program allocated over $2 million for the project period 1994-1999.	CTDEP has applied for the next round of project funds and is beginning the next round of surveys for 2000. The next 5 year report will be prepared and available to the public for the year 2001.
L9-2. Connecticut conducts nesting surveys of colonial water birds, Least Tern and Piping Plover, Osprey, waterfowl, a mid-winter eagle survey, and surveys of diamond-backed terrapin, threatened and endangered terrestrial species, and other species of special concern.	**CTDEP**	Substantive Progress	CTDEP's Natural Diversity Database maintains "Heritage" information and develops GIS coverages resulting from Wildlife Division surveys of avifauna.	
L9-3. New York conducts an American lobster mortality project funded by the LISS. In addition, New York conducts the NMFS's Recreational Fishery Statistics Survey, surveys of commercial fishery landings, seabird surveys, (e.g., ospreys, piping plovers, least terns), surveys of threatened and endangered species and species of special concern, and other surveys as needed.	**NYSDEC USNMFS**	Substantial Progress	NYSDEC and CTDEP are working together to address concerns over the NMFS's proposed regulations on lobster size. NYSDEC is funding an effort to determine genetic differences of western LIS lobsters to enhance management capabilities. If it can be demonstrated that LIS lobsters migration and reproductive cycles differ from that of east coast populations, better fisheries management policies may be developed and implemented for LIS populations. A final report for the LISS-funded lobster mortality project is available. NYSDEC and CTDEP have funded and conducted lobster mortality research related to the 1999 mortalities observed in LIS. Identification of a paramoeba infecting lobsters has been the subject of current research.	CT and NY are pursuing Federal funding for additional lobster mortality research.

9. SOUND WIDE AND SITE-SPECIFIC RESEARCH AND MONITORING (CCMP TABLE 48, P.123)

CCMP Action	Type[1]	Responsible Parties	When	Estimated Cost	Status[2]	Description	Upcoming Action
L9-4. Connecticut should pursue the construction and staffing of a marine science technology center at Avery Point with a research focus on Long Island Sound.	**R**	**CTDED CTDEP CTDOA University of Connecticut**		**$33 million in capital costs; $4 million per year in operating costs**	Partially Addressed	Through the UCONN 2000 bonding program, the marine sciences technology program at Avery Point is expanding, including addition of new professional staff and facility renovation and expansion. A new Marine Science and Technology Center at Avery Point was under construction in 1999.	The new MSTC building will be completed in Fall 2000.
L9-5. Enhance wildlife monitoring activities (e.g., seabirds, waterfowl, and marine turtles).	**R**	**CTDEP**		**$50,000 per year for staff, interns and contract work**	Partially Addressed	The Norwalk Maritime Center and Mystic Aquarium s conducting periodic surveys of seal populations in western LIS. CTDEP conducts colonial waterbird surveys at approximately 72 sites, most of which are located offshore. During 1999 only a partial survey was conducted. CTDEP is reviewing and tabulating 1999 results.	CTDEP will conduct another partial survey in 2000 and will solicit the public to participate as volunteer monitors.
L9-6. Monitor the status and trends of eelgrass in the Sound and all species of submerged aquatic vegetation in the Connecticut River using remote sensing and ground surveys.	**R**	**CTDEP EPA**	**To be initiated upon funding**	**$100,000 per year for photography, field surveys, and boundary delineations**	Partially Addressed	Baseline mapping for eelgrass in the Sound and submerged aquatic vegetation in the Connecticut River have been completed. No new remote sensing has been conducted to determine trends. A volunteer Secchi disk monitoring program has been implemented to evaluate trends in water clarity to guide eelgrass restoration efforts.	
L9-7. New York should initiate a nearshore fishery independent survey of Long Island Sound.	**R**	**NYSDEC**	**To be initiated upon funding**	**$150,000 per year**	Not Initiated		
L9-8. Continue the lobster mortality and disease monitoring project in Long Island Sound.	**R**	**NYSDEC**	**Annually**	**$65,000 per year**	Not Initiated		

KEY: 1) Type: Commitment, Recommendation

2) Status for dated actions: Complete, Ahead of Schedule, On Schedule, Behind Schedule, Partially Addressed, Not Initiated
Status for *Ongoing Programs* and ongoing *CCMP Actions*: Fully Met, Substantive Progress, Partial Progress, Discontinued

10. LIVING RESOURCES AND HABITAT RESEARCH (CCMP TABLE 49, P.124)

Ongoing Programs	Responsible Parties	Status[2]	Description	Upcoming Action
L10-1. Connecticut will continue the Long Island Sound Research fund. This fund is used to foster research that addresses priority management issues in Long Island Sound including living species and their habitats.	**CTDEP**	**Discontinued**	Funds were not available for 1996-98.	A list of living resource research priorities was included with the License Plate Program RFP for the 1999 and 2000 funding rounds

10. LIVING RESOURCES AND HABITAT RESEARCH (CCMP TABLE 49, P.124)

CCMP Action	Type[1]	Responsible Parties	When	Estimated Cost	Status[2]	Description	Upcoming Action
L10-2. Connecticut has funded the following living resources and habitat research: evaluation of the causes of declines of eelgrass; assessment of contaminant levels in the greater scaup; changes in the phytoplankton community resulting from nitrogen enrichment; effects of hypoxia on bottom feeding fish; vegetation changes in a restoring tidal wetland; and mapping of benthic communities.	**C**	**CTDEP and various Connecticut researchers**	**Each research topic has a different completion date from 1994 to 1998.**	**$1,500,000**	Some are Completed, some are Behind Schedule. See Description.	Projects funded that are complete include: a study of water quality impacts of degraded marshes; statewide land cover mapping; benthic community mapping and characterization; dredging impacts on winter flounder; impacts of phragmites on the lower CT River; sediment accumulation in coastal coves; changes in phytoplankton community resulting from nitrogen enrichment; mapping of submerged aquatic vegetation in lower CT River; and a study of fish and seafood consumption in CT. Projects that are behind schedule are: an evaluation of causes of eelgrass decline and methods of restoration; and effects of hypoxia on bottom-feeding fish.	Complete remaining projects.
L10-3. Identify priorities for management-oriented research about the living resources of Long Island Sound and their habitats.	**R**	**CTDEP NYSDEC EPA EPA-LIS Office NMFS USFWS Academic Institutions**		**$5,000 workshop**	Partial Progress	A symposium on the health of LIS lobster was held in April 2000 in Stamford in response to the 1999 lobster die-off in Western LIS.	Complete a research and management plan.

- **During 1999, Connecticut acquired 2,910 acres for open space at a cost of nearly $10.6 million, while assisting municipalities, land trusts, and water companies with the purchase of another 4,203 cares with $10 million through the state DEP open space grant program.**

- **The Long Island Sound Watershed Alliance (LISWA) passed a Resolution at its April 1999 meeting supporting the creation of a Long Island Sound Reserve system, as called for in the CCMP.**

- **The CAC sent a letter to the Policy Committee in June 1999 supporting the creation of a LIS reserve that would identify and protect open space and underwater habitats in the Sound. A coalition of interest groups is working to implement this CCMP action.**